The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

Claims

What is claimed and desired to be secured by United States Utility Patent is:

1. A "Root Zone Injection" surface irrigation apparatus comprising:

a pressurized source of water;

a water supply conduit;

water distribution means connected to said water supply conduit over the surface of the area being irrigated; said water distribution means including at least one water distribution conduit coupled in fluid communication to said water supply conduit, said at least one water distribution conduit including a plurality of "injection nozzles" formed at spaced intervals in said at least one water distribution conduit;

2. The surface irrigation apparatus defined in claim 1 wherein said surface irrigation apparatus includes a valve in said water supply conduit and a control means for controlling said valve.

3. The surface irrigation apparatus defined in claim 2 wherein said control means includes a controller and a moisture sensor for sensing moisture within the root zone being irrigated.

4. The surface irrigation apparatus defined in claim 2 wherein said delivery conduits include a plurality of spaced "injection nozzles" directing water downward into the soil root zone.

5. A surface irrigation apparatus defined in claim 1 wherein said pressurized source is water/nutrients.

6. A surface irrigation apparatus comprising:

a water/nutrient supply conduit operable to receive water/nutrients from a supply of said water/nutrients;

valve means in said water/nutrients supply conduits for regulating flow of said water/nutrients through said water/nutrients supply conduit;

a plurality of water/nutrients distribution conduits coupled in fluid communication to said water/nutrients supply conduit, each of said water/nutrients distribution conduits being spaced at pre-selected locations along said water/nutrients supply conduit and in parallel relationship with each adjacent said water/nutrients distribution conduit;

a plurality of "injection nozzles" in said water/nutrients distribution conduits, said "injection nozzles" being formed in a spaced relationship along said water/nutrients distribution conduits;

7. A method for providing ***irrigation water*** along a surface location comprising the steps of:

routing a water supply conduit to said location;

coupling a plurality of water distribution conduits in fluid communication to said water supply conduit;

forming a plurality of "injection nozzles" at spaced locations in said water distribution conduits;

laying a surface to be watered by said ***irrigation water*** with a pre-selected pattern of said water distribution conduits;

watering said surface by directing said ***irrigation water*** through said water supply conduit and said water distribution conduits through said "injection nozzles" **downward** into said surface into the soil root zone.

8. The method defined in claim 7 wherein routing a water supply conduit includes a water/nutrients supply conduit.

9. The method defined in claim 7 wherein said watering step includes interposing a valve in said water supply conduit and regulating said valve by coupling a controller to said valve.

10. The method defined in claim 7 wherein said regulating step includes placing a moisture sensor in said surface and signaling the moisture condition of said surface to said controller with said moisture sensor.